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Disparities in Infant Mortality and Contributing Factors in Rhode Island

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Rhode Island's infant mortality rate (deaths among infants aged less than one per 1,000 live births) fluctuates from year to year due to the state's small population and relatively small number of infant deaths. The long-term trend in this rate has been one of decline, with much less progress in the past fifteen years and none in the past five.[1] National data also indicate reductions in infant mortality over time.[2]

Within these trends, substantial disparities exist among different racial/ethnic groups at both the national and state levels. In Rhode Island, infant mortality rates among African Americans have consistently been 1.5 to 2 times greater than the White rate over many years.[3] This analysis presents data on factors that may contribute to this persistent disparity.

The Healthy People 2010 national objectives include reducing infant mortality to 4.5 infant deaths per 1,000 live births among all racial/ethnic groups; reducing low birth weight (< 2,500 grams or 5.5 pounds) to 5.0%; very low birth weight (<1,500 grams or 3.3 pounds) to 0.9%; prematurity (< 37 weeks) to 7.6%.[4] (Table 1) Rhode Island has assessed its progress towards achieving these objectives, and recent trends are not encouraging.

Table 1. Healthy People 2010: Maternal, Infant and Child Health Selected Health Objectives

Objective		U.S. 1998 baseline	U.S. 2010 Target	Rhode Island 2001
16-1c.	All infant deaths (within one year) per 1,000 live births	7.2	4.5	6.6
16-10a.	Low birth weight (LBW)	7.6%	5.0%	7.3%
16-10b.	Very low birth weight (VLBW)	1.4%	0.9%	1.5%
16-11a.	Preterm births	11.6%	7.6%	9.1%

Sources: Healthy People 2010: Objectives for Improving Health; Rhode Island and US

Methods. Birth certificate data were obtained for Rhode Island residents for the years 1997-2001. Rhode Island resident infant deaths were identified and linked to the birth record. Data include all deaths among Rhode Island resident infants aged less than 365 days. Infant mortality was calculated using race of the mother. However, when mother's race was unknown, infant's race on the death certificate was used. Data for 1999-2001 are provisional. Due to small numbers, three-year moving averages were calculated when comparing African American and White infant mortality rates.

Results. In Rhode Island, over the past three decades, infant mortality rates have declined from 19.7 (312 deaths) in 1970 to 6.6 (84 deaths) in 2001. (Figure 1) In 1994, Rhode Island experienced its lowest recorded infant mortality rate of 5.0 (68 deaths). Over the most recent five years, the infant mortality rate has varied between 5.7 and 7.1.

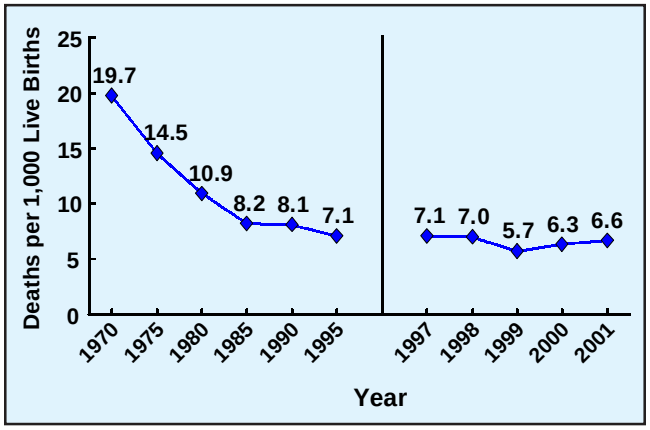

Figure 1. Resident Infant Mortality Rates, Rhode Island, 1970-1995 and 1997-2001

The large majority of infant deaths are born at low birth weight. During the early 1990's, Rhode Island saw a rise in the percentage of babies born at low birth weight. In 1991, babies born at low birth weights accounted for 5.9% of all births; by 1997 7.4% of babies were born at low birth weight, of which 1.5% were very low birth weight. Over the most recent five years (1997-2001), both the low birth weight rate and the very low birth weight rate have been relatively stable. (Figure 2)

However, during the same five-year period, the proportions of infant deaths that were among low birth weight and premature infants rose. In 1997 the proportion of infant deaths among Rhode Island residents that were born at low birth weight was 64.8%; in 2001 it had increased to 77.4%. The proportion of infant deaths that were very low birth weight also increased, from 53.4% in 1997 to 70.2% in 2001. Similarly, in 1997, babies born

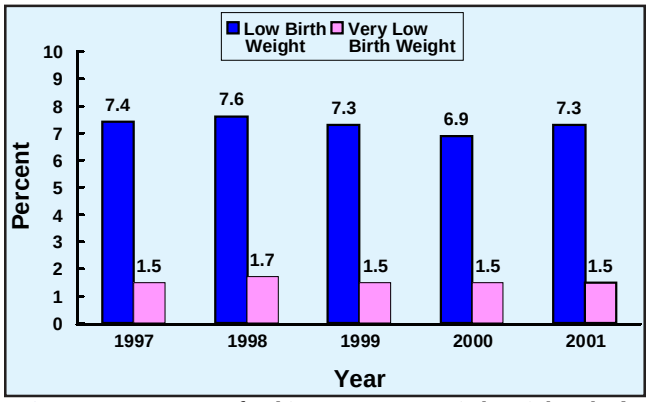

Figure 2. Percentage of Babies Born at Low Birth Weight, Rhode Island, 1997-2001

prematurely accounted for 56.8% of infant deaths, rising to 78.6% in 2001.

Substantial disparities exist between African Americans and Whites in the rates of infant mortality, low birth weight, very low birth weight and prematurity. Historically in Rhode Island, the African American infant mortality rate has averaged twice the rate among Whites. During the five-year period, 1997-2001, the gap widened to the point in 1999 where the African American rate was nearly three times the White rate. (Figure 3) By 2001, the ratio of

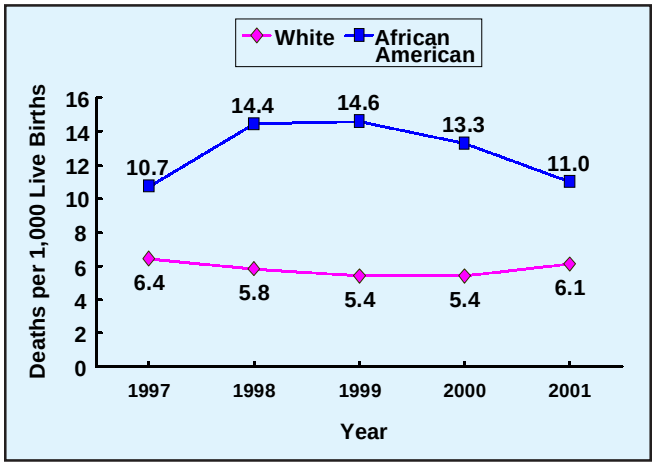

Figure 3. Resident Infant Mortality Rates [Three-Year Moving Average] by Selected Race, Rhode Island, 1997-2001

African American to White infant mortality had fallen back to 1.8.

Statewide rates for low and very low birth weight also differ substantially among African Americans and Whites. (Figure 4) In 2001, the low birth rate among African Americans (11.8%) was nearly twice the rate among Whites (6.8%). African Americans were also nearly twice as likely (2.3%) to deliver a very low birth weight infant as Whites (1.3%).

In addition, the rate of prematurity has also been on the rise. In 1997, 6.1% of all babies were born prematurely compared with 9.1% in 2001, a 49% increase. Data for 2001 indicate that the prematurity rate among African Americans (12.8%) was nearly 1.5 times higher than the rate for Whites (8.7%). During the five-year period, 1997-2001, the proportion of African American babies born prematurely increased from 7.5% in 1997 to 12.8% in 2001. Among Whites, the prematurity rate increased more slowly, from 5.9% in 1997 to 8.7% in 2001.

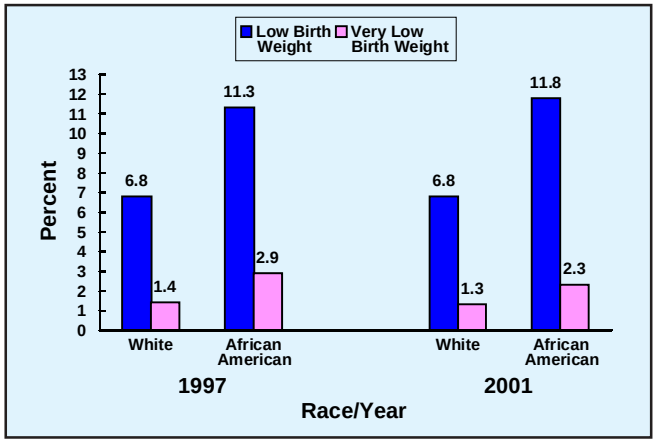

Figure 4. Low Birth Weight and Very Low Birth Weight by Selected Race, Rhode Island, 1997 and 2001

Discussion. Rhode Island is not on course to meet the Healthy People 2010 infant mortality objective of 4.5. In order to do so, racial and ethnic disparities in birth outcomes must be eliminated. This can only be achieved if the risk factors for infant mortality (low birth weight and preterm deliveries), which have been increasing, are reduced.

Despite major investments in medical insurance and prenatal care for low-income women, pregnancy outcomes have not improved, and ethnic and economic gaps persist. We must study our recent pregnancy outcomes and plan much stronger emphasis on known challenges to women's health including nutrition, smoking, stress, and poverty, along with other elements of primary prevention. A more detailed look at recent time trends will be presented in a future issue.

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